Two facets of patience in young children: Waiting with and without an explicit reward

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A B S T R A C T

Patience, or the ability to tolerate delay, is typically studied using delay of gratification (DoG) tasks. However, among other factors (e.g., type of reward), the use of a reward to test patience is affected by an individual's motivation to obtain the reward (e.g., degree of preference for the small vs. large reward). In addition, DoG tasks do not assess the extent to which an individual can wait in the absence of an explicit reward—or what we term "patience as a virtue." Accordingly, the current study used a new measure of patience—the "pure waiting paradigm"—in which 3- to 5-year-old children waited 3 min with nothing to do and with no explicit reward. We then examined the relation between performance on this task (as assessed by children's spontaneous patient behaviors) and performance on two DoG tasks (candy and video rewards). Significant correlations were found between DoG performance and patient behaviors in the pure waiting paradigm, especially when controlling for motivation. These results and methodology show for the first time a direct link between patience as a virtue and DoG performance and also provide new insights about the study of patience in children.

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Introduction

Nowadays, everything is speeded up; for instance, thanks to the Internet, communication is quasi-immediate and travel is much faster than it was during the last century (Mackenzie & Waldo, 1981; Schor, 1993). In addition, humans in Western societies have more leisure time than they had in the last few decades and, thus, tend to fill as many needs as possible in their spare time (Haller, Hadler, & Kaup, 2013). This may be due to a strong aversion to boredom (Wilson et al., 2014). Nonetheless, on a daily basis, humans also face the difficult and frustrating situation of waiting (e.g., for the bus, in the supermarket queue) and delaying gratification (e.g., waiting until the end of the work day to go on a bike ride, waiting until meal time to eat cake). Indeed, in contrast with the "immediacy" of the modern world, patience, or the ability to tolerate delay, seems to be necessary for individuals to live and succeed in modern-day societies.

Patience is often referred to as the ability to delay gratification (Bettinger & Slonim, 2007; Rosati, Stevens, Hare, & Hauser, 2007; Stevens & Stephens, 2008); indeed, the delay of gratification (DoG) task constitutes one of the four classic approaches to studying self-control (with the others being executive function tasks, self-report questionnaires, and informant-report questionnaires). However, existing definitions and measures of self-control differ widely in the literature (e.g., Depue & Collins, 1999; Evenden, 1999; White et al., 1994; Whiteside & Lynam, 2001); for example, the term "self-control" has been used synonymously with "self-regulation," "self-discipline," "willpower," "effortful control," and "inhibitory control" (Duckworth & Kern, 2011). Nonetheless, these terms all capture the idea that self-control entails "voluntary self-governance in the service of personally valued goals and standards" (Duckworth & Kern, 2011, p. 260), which includes the ability to be patient (Bettinger & Slonim, 2007; Stevens & Stephens, 2008).

This is probably why patience in children has mostly been studied using DoG tasks. In these tasks, children must forego an immediately available salient reward to obtain a more valued future reward (e.g., Mischel & Mischel, 1987; Newman, Kosson, & Patterson, 1992; Prencipe & Zelazo, 2005). There are three subtypes of DoG tasks: (a) hypothetical delay choice task, in which participants make a series of choices between small immediate rewards and large delayed rewards without actually receiving the rewards in question (Green, Fry, & Myerson, 1994; Mischel, 1961); (b) real delay choice task, in which participants are also asked to choose between small and large reward options (e.g., one or two stickers) during a single trial (e.g., Mischel, 1958) or a series of trials (e.g., Carlson, Davis, & Leach, 2005; Labuschagne, Cox, Brown, & Scarf, 2017; Newman et al., 1992; Prencipe & Zelazo, 2005), but with a reward that they actually receive (also in this task, once children have made their choice, they cannot change their minds during the trial); and (c) real delay maintenance task, in which participants are also faced with small "now" and large "later" options (e.g., one vs. two marshmallows), but in this case how long participants can "maintain" their choice (usually up to 15 min) during a single trial is the measure of interest (e.g., Mischel, Shoda, & Rodriguez, 1989; Solnick, Kannenberg, Eckerman, & Waller, 1980; Toner & Smith, 1977).

However, there are several important issues to consider with respect to these various measures of DoG. Indeed, although the DoG tasks that involve actual rewards (i.e., real delay choice and real delay maintenance) are often viewed as representing the same process (e.g., Rachlin, 2000) or highly equivalent processes (e.g., Evenden & Ryan, 1996; Green et al., 1994; Johnson & Bickel, 2002; Mischel et al., 1989), performance in such tasks is not always correlated in individual experimental studies (e.g., delay maintenance task and delay choice task: Toner, Holstein, & Hetherington, 1977) or in meta-analysis (282 multimethod samples of self-control measures: Duckworth & Kern, 2011). Indeed, Duckworth and Kern (2011) reported that DoG tasks involving actual rewards do not show convergent validity (i.e., delay choice and delay maintenance).

One possible explanation for these findings is that these tasks measure somewhat different underlying processes of delayed gratification (Duckworth & Kern, 2011). For example, despite the fact that these tasks all involve waiting for an actual reward, they lead to different outcome variables of interest. Delay choice tasks allow researchers to evaluate the number of trials for which children choose to delay but do not measure children's ability to maintain their choice after it has been made. In contrast, maintenance tasks allow researchers to evaluate the length of time children will wait for a larger